

Commodity Movements

Commodity Flow Survey

Abstract

The Commodity Flow Survey (CFS) provides data on the movement of freight by type of commodity shipped and by mode of transport. The CFS is a continuation of statistics collected in the Commodity Transportation Survey from 1963 through 1977, and includes major improvements in methodology, sample size and scope. The Bureau of the Census used a sample of 200,000 domestic establishments randomly selected from a universe of about 800,000 in manufacturing, mining, wholesale, and some selected activities in retail and service. Each selected establishment reported a sample of shipments for a two-week period in each of the four calendar quarters of 1993. This produced a total sample of about 12 million shipments. For each sampled shipment, respondents reported domestic origin and destination, Standard Transportation Commodity Classification (STCC) code, weight, value, and modes of transport. Respondents also provided information on whether the commodity was shipped in a container, a hazardous material, or an export.

Source of Data

A sample of manufacturing, mining, wholesale, auxiliary warehouses, and selected retail and service establishments completed a questionnaire.

Attributes

Geographic Coverage of Data: U.S. totals, state, 89 National Transportation Analysis Regions (combination of Bureau of Economic Analysis Economic Areas)

First Developed: 1993

Update Frequency: Quinquennial (next planned survey year is 1997)

File Format: Aggregate data only will be released

Media: CD-ROM, Printed source, Internet

Significant Features/Limitations

The 1993 CFS differs from previous surveys in expanded coverage of intermodal transportation, additional industry coverage, and more detailed geographic levels. Earlier surveys reported only the principal mode. The 1993 survey asked for all modes used for the shipment (for-hire truck, private truck, rail, water, pipeline, air, parcel delivery or U.S. Postal Service, other mode, unknown). The 1993 CFS produces data at the U.S., state, and National Transportation Analysis Region (NTAR) levels. There are 89 NTARs, comprised of BEA Economic Areas covering the United States.

The 1993 CFS does not cover shipments of crude petroleum and imports, which primarily affect water transportation and pipelines. Oak Ridge National Laboratory has estimated commodity flows for these two categories. Also, the Survey does not cover establishments classified in the Standard Industrial Classification as farms, forestry, fisheries, oil and gas extraction, governments, construction, transportation, households, foreign establishments, and most retail and service businesses. Furthermore, the CFS does not cover data on shipments originating in Puerto Rico and other U.S. territories and possessions. Commodities that are shipped from a foreign location to another foreign destination, through the United States (e.g., from Canada to Mexico) are also excluded from the Survey.

Corresponding Print Source

1993 Commodity Flow Survey: U. S. Preliminary Report (by Census Bureau)

1993 Commodity Flow Survey: Area Reports for 50 States (by Census Bureau)

1993 Commodity Flow Survey: Preliminary Observations (by the Bureau of Transportation Statistics)

1993 Commodity Flow Survey: State Summaries (by the Bureau of Transportation Statistics)

Sponsoring Organization

U.S. Department of Transportation, Bureau of Transportation Statistics; and the U.S. Department of Commerce, Bureau of the Census

Performing Organization

Department of Commerce, Bureau of the Census; and Oak Ridge National Laboratory

Availability

CD-ROM and Printed Sources: Bureau of the Census, Commodity Flow Survey Branch, Services Division, Washington, DC 20233; (301) 457-2805.

CD-ROM and Printed Sources: DOT/Bureau of Transportation Statistics, 400 7th Street, SW, Room 3430, Washington, DC 20590; (202) 366-3282; Fax: (202) 366-3640.

Internet: www.bts.gov.

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Commodity Movements Originating in Michigan Summary of 1993 CFS

In Michigan, the CFS measured \$256 billion of goods weighing 324 million tons. Michigan accounted for approximately 4 percent of the value and about 3 percent of the weight of total U.S. shipments. See attached table. The CFS data cover shipments by establishments in mining, manufacturing, wholesale, and selected retail and service industries. The data exclude most shipments of crude oil; therefore, the totals and percentages do not fully reflect the contribution of pipeline shipments.

The major commodities shipped by establishments in Michigan vary when ranked by value and by weight of the shipments. The most important commodity shipped by value was transportation equipment. Other important commodities by value were: food or kindred products; fabricated metal products; machinery, including computers; and chemicals or allied products. Important commodities shipped by weight were: nonmetallic minerals; petroleum or coal products; clay, concrete, glass, or stone products; food or kindred products; and primary metal products.

Local transportation of freight is important to Michigan's commerce. The distribution of commodities by domestic destination and distance of shipments reflects the importance of local transport. The CFS shows that in 1993, about 48 percent of the value and 74 percent of the weight of total shipments from Michigan were shipped to destinations within the state. About 34 percent of the value and about 58

percent of the weight of all shipments were between places less than 50 miles apart. In comparison, about 30 percent of the value and 56 percent of the weight of total U.S. shipments were between places less than 50 miles apart. In Michigan, about 45 percent of the value of shipments and 68 percent of the weight of shipments were between places less than 100 miles apart.

More than half (52 percent) of the value and over one-quarter (26 percent) of the weight of all shipments from Michigan went to other states. The most important destination by value and weight was Ohio. Other important destinations by value were: Illinois, Indiana, California, and Texas. Other important destination states by weight: Illinois, Indiana, Wisconsin, and Pennsylvania.

Most commodities (77 percent of the value and the weight) were moved by trucks. Rail accounted for about 7 percent of the value and 9 percent of the weight of shipments. The CFS data confirm the rising importance of parcel, U.S. postal, and courier services that have emerged in recent years. In 1993, this mode of transport was used to ship 539,000 tons of goods worth about \$14 billion or 6 percent of the value of all shipments in Michigan. In comparison, about 9 percent of the value of total U.S. shipments were moved by this mode.

1993 Commodity Flow Survey State Summary: Michigan
Tabulation by the Bureau of Transportation Statistics, U.S. Department of Transportation

Summary	Value	Weight
Total shipments originating in Michigan	\$256.3 billion	323.8 million tons
Percent of total U.S. shipments (preliminary U.S. estimate)	4.3	3.3

Commodity Shipments Originating in Michigan Ranked by Value		Commodity Shipments Originating in Michigan Ranked by Weight	
Commodity	Percent of value	Commodity	Percent of weight
Transportation equipment	32.9	Nonmetallic minerals	25.0
Food or kindred products	13.6	Petroleum or coal products	18.0
Fabricated metal products	8.0	Clay, concrete, glass, or stone products	8.9
Machinery, including computers	6.5	Food or kindred products	8.1
Chemicals or allied products	5.8	Primary metal products	6.4
Other commodities	33.3	Other commodities	33.7
Total	100.0	Total	100.0

Domestic Destinations of Shipments Originating in Michigan Ranked by Value		Domestic Destinations of Shipments Originating in Michigan Ranked by Weight	
State	Percent of value	State	Percent of weight
Michigan	47.9	Michigan	73.9
Ohio	8.1	Ohio	8.3
Illinois	5.1	Illinois	2.8
Indiana	3.9	Indiana	2.8
California	3.4	Wisconsin	1.4
Texas	3.4	Pennsylvania	1.0
Other States	28.2	Other States	9.8
Total	100.0	Total	100.0

Modes of Transportation for Shipments Originating in Michigan		
Modes	Percent of value	Percent of weight
Parcel, U.S. Postal Service, or courier service	5.6	0.2
Truck (for-hire, private, and both private truck and for-hire truck)	77.0	77.3
Air (including truck and air)	0.8	-
Rail	6.6	9.4
Water (inland water, Great Lakes, deep sea, truck and water, and rail and water)	0.1	6.8
Pipeline*	**	**
Truck and rail intermodal combination	5.5	0.5
Other intermodal (truck and pipeline, inland and Gt. Lakes, inland and deep sea)	**	**
Other, unknown, and withheld for sampling and disclosure reasons	4.4	5.8
Total	100.0	100.0

Domestic Distance Shipped for Commodities Originating in Michigan		
Distance	Percent of value	Percent of weight
Less than 50 miles	34.0	57.6
50 to 99 miles	11.1	10.7
100 to 249 miles	19.0	14.8
250 to 499 miles	12.0	10.3
500 to 749 miles	9.8	3.5
750 to 999 miles	4.2	1.4
1,000 to 1,499 miles	4.5	0.9
1,500 to 1,999 miles	4.3	0.7
2,000 miles or more	1.0	0.1
Total	100.0	100.0

* CFS data for pipelines exclude most shipments of crude oil.

** Some or all data suppressed to avoid disclosure or because data are statistically unreliable.

- Represents zero or less than 1 unit of measurement.

NOTE: Data are estimates based on a sample and subject to error. See Appendix B, "Reliability of the Data," in source document.

SOURCE: U.S. Department of Commerce, Bureau of the Census, 1992 *Census of Transportation, Communications, and Utilities*, 1993 *Commodity Flow Survey*, TC92-CF (Washington, DC: 1996).

90-Percent Confidence Intervals for 1993 Commodity Flow Survey State Summary: Michigan
Tabulation by the Bureau of Transportation Statistics, U.S. Department of Transportation

Summary	Value	Weight
Total shipments originating in Michigan (in billion \$ and million tons)	236.48 - 276.12	285.45 - 362.15
Percent of total U.S. shipments (preliminary U.S. estimate)	3.91 - 4.59	2.88 - 3.68

Commodity Shipments Originating in Michigan Ranked by Value		Commodity Shipments Originating in Michigan Ranked by Weight	
Commodity	Percent of value	Commodity	Percent of weight
Transportation equipment	26.4 - 39.3	Nonmetallic minerals	16.4 - 33.5
Food or kindred products	10.9 - 16.3	Petroleum or coal products	9.0 - 27.0
Fabricated metal products	6.9 - 9.0	Clay, concrete, glass, or stone products	6.9 - 10.8
Machinery, including computers	5.4 - 7.6	Food or kindred products	6.7 - 9.4
Chemicals or allied products	4.6 - 7.0	Primary metal products	4.9 - 7.9
Other commodities	(NA)	Other commodities	(NA)
Total	(X)	Total	(X)

Domestic Destinations of Shipments Originating in Michigan Ranked by Value		Domestic Destinations of Shipments Originating in Michigan Ranked by Weight	
State	Percent of value	State	Percent of weight
Michigan	43.6 - 52.2	Michigan	70.5 - 77.4
Ohio	7.1 - 9.1	Ohio	6.0 - 10.6
Illinois	4.1 - 6.1	Illinois	2.0 - 3.6
Indiana	3.2 - 4.6	Indiana	1.8 - 3.8
California	2.7 - 4.1	Wisconsin	1.1 - 1.7
Texas	2.7 - 4.1	Pennsylvania	0.8 - 1.2
Other States	(NA)	Other States	(NA)
Total	(X)	Total	(X)

Modes of Transportation for Shipments Originating in Michigan		
Modes	Percent of value	Percent of weight
Parcel, U.S. Postal Service, or courier service	4.6 - 6.6	(X)
Truck (for-hire, private, and both private truck and for-hire truck)	74.4 - 79.6	72.4 - 82.2
Air (including truck and air)	0.6 - 1.0	(X)
Rail	5.3 - 7.9	4.5 - 14.3
Water (inland water, Great Lakes, deep sea, truck and water, and rail and water) ..	(X)	4.0 - 9.6
Pipeline*	(X)	(X)
Truck and rail intermodal combination	3.0 - 8.0	0.2 - 0.8
Other intermodal (truck and pipeline, inland and Gt. Lakes, inland and deep sea) ..	(X)	(X)
Other, unknown, and withheld for sampling and disclosure reasons	3.3 - 5.6	5.3 - 6.3
Total	(X)	(X)

Domestic Distance Shipped for Commodities Originating in Michigan		
Distance	Percent of value	Percent of weight
Less than 50 miles	30.4 - 37.6	53.5 - 61.7
50 to 99 miles	9.8 - 12.4	8.7 - 12.7
100 to 249 miles	17.2 - 20.8	12.7 - 16.9
250 to 499 miles	11.0 - 13.0	8.2 - 12.4
500 to 749 miles	8.8 - 10.8	2.5 - 4.5
750 to 999 miles	3.4 - 5.0	1.2 - 1.6
1,000 to 1,499 miles	3.5 - 5.5	0.6 - 1.2
1,500 to 1,999 miles	3.6 - 5.0	0.5 - 0.9
2,000 miles or more	0.7 - 1.3	(X)
Total	(X)	(X)

* CFS data for pipelines exclude most shipments of crude oil.

NA Not available.

X Not applicable.

NOTE: For explanation of 90-percent confidence intervals see Appendix B, "Reliability of the Data," in source document.

SOURCE: U.S. Department of Commerce, Bureau of the Census, 1992 Census of Transportation, Communications, and Utilities, 1993 Commodity Flow Survey, TC92-CF (Washington, DC: 1996).

1993 Commodity Flow Survey
Out-of-State Shipments as Percent of State's Total Shipments

State	Percent of value	Percent of weight
Alabama	66.2	28.8
Alaska	19.2	17.4
Arizona	57.3	23.0
Arkansas	73.7	41.0
California	38.8	8.8
Colorado	57.6	23.8
Connecticut	79.2	23.0
Delaware	85.2	72.2
Florida	36.8	18.2
Georgia	66.8	28.3
Hawaii	7.4	10.8
Idaho	68.2	35.5
Illinois	66.0	42.6
Indiana	71.6	43.9
Iowa	64.9	39.6
Kansas	74.7	46.2
Kentucky	75.6	51.0
Louisiana	50.7	33.6
Maine	65.5	27.2
Maryland	69.0	43.4
Massachusetts	66.5	28.3
Michigan	52.1	26.1
Minnesota	60.0	41.3
Mississippi	71.3	43.9
Missouri	73.5	36.6
Montana	47.0	57.8
Nebraska	70.9	51.0
Nevada	74.1	19.0
New Hampshire	77.8	**
New Jersey	68.7	40.6
New Mexico	51.7	40.3
New York	58.8	23.8
North Carolina	61.9	30.4
North Dakota	62.5	43.9
Ohio	62.5	30.0
Oklahoma	65.5	45.1
Oregon	58.5	19.8
Pennsylvania	64.7	38.1
Rhode Island	79.1	45.8
South Carolina	69.5	36.5
South Dakota	60.0	44.9
Tennessee	74.4	39.2
Texas	40.0	16.3
Utah	63.8	19.2
Vermont	65.8	31.9
Virginia	63.5	28.4
Washington	44.2	16.2
West Virginia	74.6	63.7
Wisconsin	64.9	30.5
Wyoming	70.8	84.3

** Some or all data suppressed to avoid disclosure or because data are statistically unreliable.
SOURCE: U.S. Department of Commerce, Bureau of the Census, *1992 Census of Transportation, Communications, and Utilities, 1993 Commodity Flow Survey, TC92-CF* (Washington, DC: 1996).

1993 Commodity Flow Survey
Shipments to Michigan from Neighboring States

State of origin	Value (million dollars)	Weight (thousand tons)	Percent value of state's shipments*	Percent weight of state's shipments*
Illinois	17,509	7,882	5.1	1.5
Indiana	17,524	11,271	9.8	3.9
Ohio	24,588	15,994	7.6	3.4
Wisconsin	8,309	5,398	5.8	3.3

* Percentages are based on total shipments originating in neighboring states.

- Data do not meet publication standards.

SOURCE: U.S. Department of Commerce, Bureau of the Census, *1992 Census of Transportation, Communications, and Utilities, 1993 Commodity Flow Survey*, TC92-CF, 1996 (Washington, DC: 1996).